AMENDMENTS

In response to the Office Action dated 09/23/2004, please amend the above-identified application as follows:

In the Claims:

(amended) Claim 1. A magnetic separator for separating magnetically responsive particles from a non-magnetic test medium in a path through an elongated non-magnetic container having an interior surface, the separator comprising:

magnetic means mounted exteriorly of said interior surface so as to generate a magnetic field strength within the container in which the magneic field strength within the container is stronger in the test mdium along the interior surface of the container than in the test medium more distant from the magnetically responsive particlse with in the test medium to attract the magnetically responsive particles toward the interior surface of the container and cause such particles t o be adhered to the interior surface, and

deflector means within the path in said container to deflect the magnetically responsive particles in said path toward the interior surface wherein said deflection means comprises:

a plunger operable to be displaced into said container to confront said interior surface ~~and spaced therefrom to form an annular space through which said magnetic test medium may pass~~, and

an optimum annular space formed between said interior surface and said operable plunger through which said magnetic test medium may pass whereby said magnetic test medium within said space ensures that all parts of said test medium spend a selected time for complete separation of said magnetic particles.

(cancel) Claim 2. A magnetic separation apparatus according to claim 1 wherein said container has one size to facilitate test reactions in said test medium prior to displacement of said plunger, and a second size in said annular space after

displacement of said plunger to facilitate collection of the magnetically responsive particles from said annular space.

(amended) Claim 3. A magnetic separator for separating magnetically responsive particles from a non-magnetic test medium in a path through an elongated non-magnetic container having an interior surface, the separator comprising:

magnetic means mounted exteriorly of said interior surface so as to generate a magnetic field strength within the container in which the magnetic field strength within the container is stronger in the test medium along the interior surface of the container than in the test medium more distant from the interior surface and is operative upon the magnetically responsive particles within the test medium to attract the magnetically responsive particles toward the interior surface of the container and cause such particles to be adhered to the interior surface, and

deflection means within the path in said container to deflect the magnetically responsive particles in said path toward the interior surface, wherein said deflection means comprises:

a plunger placed in said path, said plunger having outside <u>configuration similar to said interior surface and</u> dimensions ~~similar to but~~ less than the inside dimensions of said interior surface to provide an optimum elongated annular space along the length of the interior surface, said plunger being positioned in said path to deflect the magnetically responsive particles in said path into said elongated annular space and toward the interior surface <u>whereby a volume and time said magnetic particles are within said space ensures complete separation of said magnetic particles</u>.

(cancel) Claim 4. A magnetic separator for separating magnetically responsvie particles from a non-magnetic test medium in a path through an elongated non-magnetic container having an interior surface, the separator comprising:

magnetic means mounted exteriorly of said interior surface so as to generate a magnetic field strength within the container in which the magnetic field strength within the container is stronger in the test medium along the interior surface of the container than in the test medium more distant from the interior surface and is operative upon the magnetically responsive particles within the test meicum to attract the magnetically responsive particles toward the interior surface of the container and cause such particles to be adhered to the interior surface, and

deflection means within the path in said container to deflect the magnetically responsive particles in said path toward the interior surface, wherein said deflection means comprises:

a stirrer positioned in said path to deflect the magnetically responsive particles in said path toward the interior surface.

(original) Claim 5. A magnetic separation apparatus for separating magnetically responsive particles from a non-magnetic test mediumin a non-magnetic container having an interior surface, the separator comprising:

magnetic means having a gap receiving the container, said magnetic means generating a magnetic field gradient within the container in which the magnetic field strength within the container is stronger in the test medium along the interior surface of the container than in the test medium more distant from the interior surface and is operative upon the magnetically responsive particles within the test medium to attract the magnetically responsive particles toward the interior surface of the container and cause such particles to be attracted to the interior surface; and

a non-magnetic plunger operable to be displaced into said container to provide an annular space within said interior surface into which said magnetic test medium may pass.

(original) Claim 6. The magnetic separation apparatus of claim 5 wherein said container comprises:

an elongated hollow cylindrical passage having an inlet for introducing the magnetic test medium into one end of the passage and an outlet for discharging test medium from the opposite end of the passage,

said interior surface being located between said inlet and said outlet.

(original) Claim 7. The magnetic separation apparatus of claim 6 wherein said hollow cylindrical passage is configured for conducting a flow of fluid therealong in a direction parallel to the longitudinal axis of the passage from said inlet to said outlet.

(original) Claim 8. The magnetic separation apparatus of claim 6 wherein said gap of the magnetic means comprises a plurality of pole faces each disposed at an operative position exteriorly of said container adjacent said interior surface, said pole faces being disposed circumferentially of said cylindrical axis of the passage,

At least one of said pole faces being mounted for displacement radially outward from the axis of the passage to afford reduction of the magnetic field strength within the container, and thereby afford reduction of the attraction of said particles to said interior surface adjacent the operative position of said at least one pole face.

(amended) 9. A magnetic separation apparatus for separating magnetically responsive particles from a non-magnetic test medium passing through a non-magnetic container having an interior surface, the separator comprising:

magnetic means generating a magnetic field gradient within the container in which the magnetic field strength within the container is stronger in the test medium along the interior surface of the container than in the test medium more distant from the interior surface and is operative upon the magnetically responsive particles within the test medium to attract the magnetically responsive particles toward the interior surface of the container and cause such particles to be adhered to the interior surface, and

a non-magnetic deflector comprising a plunger having an outside configuration similar to said interior surface and dimensions ~~similar to but~~ less than the inside dimensions of said interior surface to provide an elongated annular space along the length of the interior surface and operable to deflect magnetically responsive particles into said narrow annular space immediately adjoining said interior surface along which said magnetic test medium passes.

(original) Claim 10. A magnetic separation apparatus according to claim 9 wherein said plunger is operable to be displaced int said container to confront said interior surface and spaced therefrom to form said annular space into which said magnetic test medium may pass.

(cancel) Claim 11. A magnetic separation apparatus according to claim 10 wherein said container has one size to facilitate test reactions in said test medium prior to displacement of said plunger, and a second size in said annular chamber after displacement of said plunger to facilitate collection of the magnetically responsive particles from said narrow space.

(original) Claim 12. A magnetic separation sapparatus according to claim 9 wherein said container interior surface is carried by said plunger, and said magnetic means is mounted in said plunder and comprises pole faces directed toward said interior surface.

(original) Claim 13. A magnetic separation apparatus according to claim 9 wherein said magnetic means has a gap with pole faces directed toward said gap, said container being positioned in said gap.

(original) Claim 14. The magnetic separation apparatus of claim 13 wherein said magnetic means comprises each disposed exteriorly of said container adjacent said interior surface, the number of said pole faces being in the range of 8 to 64 faces disposed circumferentially of the axis of the passage.

(original) Claim 15. The magnetic separation apparatus of claim 14 wherein the centers of the pole faces are spaced apart by a distance not less than the distance between the faces and said internal surface.

(original) Claim 16. The magnetic separation apparatus of claim 9 in combination with a container, wherein said container has thin wall section providing said interior surface, said thin wall section having a wall thickness in the range of 0.635 mm to 0.100 mm.

(original) Claim 17. The magnetic separation apparatus of claim 16 wherein said wall thickness is approximately 0.100 mm.

Cancel claims 18 to 25.

(new) 26. A magnetic separation apparatus according to claim 1 wherein said annular space is optimized to facilitate test reactions and collection of the magnetically responsive particles within said annular space.

(new) 27. A magnetic separation apparatus according to claim 10 wherein said annular space is optimized to facilitate test reactions and collection of the magnetically responsive particles within said annular space.